

## ***Interactive comment on “Spatially distributed water-balance and meteorological data from the rain-snow transition, southern Sierra Nevada, California” by Roger Bales et al.***

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My comments are minor in nature and should be easily remedied by the authors. Many of the data sets in the manuscript cover different time periods and locations. It would be useful to have a graphical representation of this to see when nodes were brought on line and how this compares to the stream gage network and any large gaps in each node/data logger. Additionally, the file hosted at <https://doi.org/doi:10.6071/Z7WC73> is very large. I suggest splitting it into its component pieces to facilitate easy access. I did find all data files to be machine readable; however, the readme in <https://doi.org/doi:10.6071/Z7WC73> would be better suited as a formal metadata XML

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file similar to what is found at <https://doi.org/10.2737/RDS-2017-0037>. Furthermore, the .dat files at <https://doi.org/doi:10.6071/Z7WC73> appear to be comma delimited, I suggest changing the extension to .csv to better facilitate reading of these files. It appears that these files may have been .csv files at some point as one appears to have retained a .csv extension.

Response: We have added Figure 6, which shows the time periods for each set of measurements described. We agree that splitting the files could make the data more accessible to some users, and are making progress towards that goal. The data host has updated their structure, which allows us to remove the single zip file and split it into files for Level 0, Level 1, and Level 2 data, and data graphs. We are working with the managers of UC Dash, the archive host, to split the dataset into more manageable pieces. We prepared an xml file for the archive; again we are working with the UC Dash managers to create a standardized xml format. Only some of the .dat files in the Level 0 SSCZO dataset are common delimited so we did not change all files to .csv. Because the .dat file extension is easily read by multiple programs and is non-proprietary, we plan to leave those files as-is. Given the irregularity pointed out by the reviewer, we have reviewed the files for consistency.

There is some confusion about missing values in the data files that this manuscript references. The manuscript indicates at 5:26 that missing values are represented by blank cells; however the .dat files also contain quoted not a number ("NAN") values, which are not described in the readme or the manuscript. The readme for <https://doi.org/doi:10.6071/Z7WC73> indicates that missing values are represented as -999 and the metadata for <https://doi.org/10.2737/RDS-2017-0037> indicates that values not checked (definition needed) are given -9999 while measurements not taken are left as blank. The range of possible and missing values need to be better quantified for all data sets and adequately described in included metadata/readme files. I suggest that it may be best to leave this level of detail out of the manuscript and keep in only in the metadata/readme files included with the datasets as it will then be readily accessible

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when accessing the data.

Response: Text now refers to metadata files for missing values. Metadata files clarified as suggested.

Technical Comments:

1:17 - catchment area is given as 4.6 km<sup>2</sup> at 3:9 Response: Correction made.

1:22 - greatest sensor depth given as 90 cm at 4:12 Response: Changed to "within the top 1 m". Most but not all nodes had 4 sensor depths, depending on depth that could be excavated with a pick and shovel. An integrated soil volumetric water content was calculated for the top meter, based on the measurement volume of the sensors as well as the installation depths. An equation was added to Section 4.1.

2:14 - define water-measurement system Response: Sentence rewritten for clarity.

2:21-22 - redundant with previous sentence Response: Sentence refers to technical design, clarified.

3:9 - catchment area is given as 4.6 km<sup>2</sup> not 4 km<sup>2</sup> as mentioned earlier. Response: Abstract text changed to 4.6 km<sup>2</sup> for consistency.

3:16-7 - land cover description redundant, combine into one sentence. Response: Sentences combined.

3:22 - m after 1975 Response: Done.

4:12 - greatest sensor depth given as 90 cm but soil moisture measurements described as going to 1 m. Response: Measurement depths versus integrated calculation clarified.

5:11 - change to "by the flume and weir manufacturers." Response: Done.

5:21 - horizontal axis in fig 5 is in day of water year, consider adding day of water year in a parenthetical after June 1. Response: Done.

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5:26 - see no data value comment above. Response: Changed as noted above.

Figure 1 - dangling lines from overview map should be removed. Response: Done.

Figure 3 - horizontal axis line missing from b. Deepest sensor depth is described at 90 cm, but soil water content is said to be measured to 1 m dept? What is the measurement area for each installed sensor? Response: Measurement depths versus integrated calculation clarified.

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-69>, 2018.

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